

In the Claims: Please amend the claims as follows. This listing of the claims replaces all previous listings.

1. (currently amended) A chip arrangement comprising a first chip which has at least one first signal interface with first coupling elements arranged along a first line in a first number density and at least one second chip which has at least one second signal interface with second coupling elements arranged along a second line in a second number density,

- ~~in which~~wherein the first signal interface is provided along an edge of the first chip and the second signal interface is provided along an edge of the second chip,

- ~~in which~~wherein the first and second coupling elements are ~~adapted~~configured to permit contactless signal transmission between the first and second signal interfaces,

- ~~in which~~wherein the first and second chips are so arranged relative to each other that coupling elements of the first and the second signal interfaces can contactlessly transmit signals with each other, wherein said edges of the first and second chips are arranged in mutually facing relationship,

- ~~in which~~wherein the first and second signal interfaces have a respective first and second longitudinal extent along a respective line associated with the respective one of the first and second interfaces, the longitudinal extent of at least one of the signal interfaces along the line associated therewith ~~is being~~is greater than ~~the a~~a length of ~~the an~~an overlap of the two longitudinal extents, wherein said overlap is ~~the a~~a distance which ~~the a~~a projection of the first longitudinal extent on to the second longitudinal extent has in common with the second longitudinal extent,

- ~~and in which~~wherein one of the signal interfaces has a greater number density of coupling elements than the other, and

- wherein the coupling elements are coils whose magnetic longitudinal axes are arranged in a horizontal plane in parallel relationship with a surface of the chip.

2. (withdrawn) A chip arrangement comprising a first chip which has at least one first signal interface with first coupling elements arranged along a first line in a first number density and at least one second chip which has at least one second signal interface with

second coupling elements arranged along a second line in a second number density, and a coupling component which on a substrate has a coupling unit with third coupling elements arranged along a third line in a third number density and fourth coupling elements arranged along a fourth line in a fourth number density, wherein the third coupling elements are respectively electrically conductively connected to the fourth coupling elements,

- in which the first signal interface is provided along an edge of the first chip and the second signal interface is provided along an edge of the second chip,

- in which the first, second, third and fourth coupling elements are adapted to permit contactless signal transmission between the first and second signal interfaces,

- in which the first and second chips and the coupling component are so arranged relative to each other that third coupling elements of the coupling unit and first coupling elements of the first signal interface and fourth coupling elements of the coupling unit and second coupling elements of the second signal interface can respectively contactlessly transmit signals with each other, wherein said edges of the first and second chips are arranged in mutually facing relationship,

- in which in respect of the longitudinal extents of the first and third coupling elements respectively in the spacing direction of the coupling elements along the line associated therewith, at least one of the longitudinal extents is greater than the length of the overlap of both longitudinal extents,

- in which in respect of the longitudinal extents of the second and fourth coupling elements respectively in the spacing direction of the coupling elements along the line associated therewith, at least one of the longitudinal extents is greater than the length of the overlap of both longitudinal extents,

- and in which the coupling component has a greater number density of coupling elements than the first or the second signal interface or the first and the second signal interfaces.

3. (currently amended) A-The chip arrangement as set forth in claim 1, wherein-in ~~which~~ the first and second coupling elements are adapted configured to permit contactless signal transmission by means of electromagnetic, alternatively capacitive, alternatively

inductive, alternatively inductive and capacitive coupling between a first and one or more second coupling elements respectively.

4. (currently amended) A ~~The~~ chip arrangement as set forth in claim 1, wherein-in ~~which~~ the longitudinal extent of the signal interface which has the greater number density is greater.

5. (withdrawn) A chip arrangement as set forth in claim 1 in which the second chip at least partially rests on the first chip.

6. (withdrawn) A chip arrangement as set forth in claim 2 in which the first and second chips are arranged in mutually juxtaposed relationship on a carrier surface.

7. (withdrawn) A chip arrangement as set forth in claim 5 in which a filler with a high dielectric constant is disposed between the first and the second signal interface or optionally between the first signal interface and the coupling unit and between the second signal interface and the coupling unit.

8. (currently amended) A ~~The~~ chip arrangement as set forth in claim 1, wherein-in ~~which~~ a number N2 of the coupling elements of the signal interface with the greater number density is in a ratio $N2=g*N1+X$ to the number N1 of the coupling elements of the signal interface with the lesser number density, and wherein g is a number greater than 1 and X is the number of the coupling elements which are in overshoot longitudinal portions of the signal interface.

9. (currently amended) A ~~The~~ chip arrangement as set forth in claim 1, wherein-in ~~which~~ the signal interface of the chip which in a signal flow between the first and the second chips forms a receiver and is referred to subsequently as the receiver chip has coupling elements with a greater number density.

10. (currently amended) A ~~The~~ chip arrangement as set forth in claim 9 comprising a filter circuit on the receiver chip, which is connected downstream of the signal interface and is ~~adapted~~ configured to reconstruct signals sent from coupling elements at a transmitter end on the basis of the signals received by the coupling elements at a receiver end.

11. (currently amended) A ~~The~~ chip arrangement as set forth in claim 10, ~~wherein in which~~ the filter circuit has a number of weighting elements which are respectively ~~adapted~~ configured to multiply signals received by a plurality of coupling elements at the receiver end by variable weighting factors and to add the signals weighted in that way.

12. (currently amended) A ~~The~~ chip arrangement as set forth in claim ~~11~~ 1, ~~wherein in which~~ each of a plurality of the coupling elements at the receiver end of the receiver chip are connected to a respective plurality of the weighting elements.

13. (currently amended) A ~~The~~ chip arrangement as set forth in claim ~~11~~ 1, ~~wherein in which~~ the number of the weighting elements is equal to the number of the coupling elements provided at on the transmitter end ~~chip~~.

14. (withdrawn) A chip arrangement as set forth in claim 11 comprising a control unit which is connected to the coupling elements and the filter circuit and is adapted to determine the weighting factors.

15. (withdrawn) A chip arrangement as set forth in claim 14 in which the control unit is adapted, for each weighting element, to compare the signals received at the coupling elements at the receiver end which are connected to the filter to a respective predefined signal pattern and to associate a weighting factor dependent on the comparison result with the respective coupling elements.

16. (withdrawn) A chip arrangement as set forth in claim 15 in which the control unit is adapted per weighting element to associate a weighting factor which is different from

zero at a maximum with one through three coupling elements in such a way that the total of all weighting factors is 1.

17. (currently amended) A The chip arrangement as set forth in claim 10, wherein ~~in which~~ the filter circuit ~~additionally or alternatively~~ has a number of filter banks, ~~wherein~~ each of the filter bank ~~is~~ banks being connected at an its input side to a number of the coupling elements.

18. (currently amended) A The chip arrangement as set forth in claim 17, wherein ~~in which~~ each of the filter ~~banks~~ bank has a number of filters, and wherein each of the ~~filters~~ filter is connected on ~~the~~ its input side to a respective one of the coupling ~~element~~ elements.

19. (currently amended) A The chip arrangement as set forth in claim 18, wherein ~~in which~~ each of the filters has a filter input and ~~filter is adapted~~ configured to deliver an output signal which depends on a weighted sum of the current signal and its filter input and a number of signals at its filter input which signals preceded it ~~the current signal~~ in respect of time ~~at its input~~.

20. (currently amended) A The chip arrangement as set forth in claim 17, wherein ~~in which~~ each of the filters ~~filter is adapted~~ configured to determine its output signal A in accordance with the following formula:

$$A(z) = \sum_{j=1}^r S(j) \cdot w(j, z)$$

wherein $S(j)$ is ~~a~~ the signal at ~~a~~ the filter input in a time step j , r is ~~the~~ a total number of the time steps considered, w is a weighting factor depending on the respective time step j and z is an index identifying the filter.

21. (currently amended) A The chip arrangement as set forth in claim 20,
- wherein ~~in which~~ the filter has a signal delay line with r delay elements, r multipliers and an one adder,

- ~~wherein a multiplier~~one of the multipliers and a ~~delay element~~one of the delay elements are connected in parallel relationship downstream of each except the last delay element,

- ~~wherein solely a multiplier~~one of the multipliers is connected downstream of the last delay element, and

- ~~wherein~~ the outputs of the multipliers are connected to parallel inputs of the ~~summing member~~adder.

22. (currently amended) A ~~The~~ chip arrangement as set forth in claim 18, ~~wherein the weighting element is included in~~in which each of the filter bank~~banks~~has a weighting unit which is adapted to multiply signals received by the filters of the respective filter bank by variable weighting factors and to add the signals weighted in that way.

23. (currently amended) A ~~The~~ chip arrangement as set forth in claim 1, ~~further~~7 comprising a control unit, which is connected to the filter banks and which is ~~adapted~~configured in a training phase to subject, in a training phase, the signals applied to the coupling elements ~~at the receiver end of the receiver chip to a correlation with one or more known signal patterns and on the basis of the correlation result to determine the weighting factors~~on the basis of the correlation result~~of the filters and the weighting circuit.~~

24. (withdrawn) A chip arrangement as set forth in claim 1 in which the chip without an increased number of first coupling elements has a respective edge coupling element at the ends of its signal interface and is adapted to apply a predefined edge signal to the edge coupling elements.

25. (currently amended) A ~~The~~ chip arrangement as set forth in claim 1, ~~wherein in which the transmitter chip which forms a transmitter in the signal flow between the first and the second chips~~ has a transmitting circuit which has complementary CMOS transistors.

26. (currently amended) A ~~The~~ chip arrangement as set forth in claim 1, wherein in ~~which one of the first or second~~ chip is a microprocessor and the other ~~chip~~ is a memory chip.

27. (withdrawn) A chip arrangement as set forth in claim 1 comprising a third chip which is coupled to the first chip or the second chip corresponding to the manner recited in claim 1 for signal transmission in such a way that the first or the second chip respectively is adapted for coupling to the third chip like the first chip of claim 1 and the third chip is adapted for coupling to the first chip like the second chip of claim 1, or vice-versa, wherein the first or the second chip has a further signal interface having the features of the first signal interface or the second signal interface.

28. (withdrawn) A chip arrangement as set forth in claim 2 comprising a third chip which with the first or the second chip corresponding to the manner recited in claim 2 is adapted and arranged for signal transmission, wherein the first or the second chip has a further signal interface having the features of the first signal interface or the second signal interface.

29. (withdrawn) A coupling component for contactless signal transmission between a first and a second chip in an arrangement as set forth in claim 2, which on a substrate has a coupling unit which has third coupling elements arranged along a third line in a third number density and fourth coupling elements arranged along a fourth line in a fourth number density, wherein the third coupling elements are respectively electrically conductingly connected to the fourth coupling elements.

30. (withdrawn) A coupling component as set forth in claim 29 in which the spacing of the third or fourth coupling elements and their widthwise extent are so selected that a third coupling element or a fourth coupling element and the spacing relative to an adjacent third or fourth coupling element respectively assume overall a maximum of 10 micrometers.

31. (cancelled).

32. (currently amended) A The chip arrangement as set forth in claim ~~34~~ 1, wherein ~~in which~~ the first or the second coupling elements are metallic electrically conductive strips arranged in mutually parallel relationship.

33. (currently amended) A The chip arrangement as set forth in claim 32, wherein the strips have a strip width and are arranged with an equal spacing between mutually neighboring strips, and wherein a ~~in which~~ the sum of the spacings of the mutually neighboring strips and of spacing ~~and~~ the strip width is between 1 and 25 micrometers.

34. (cancelled).

35. (currently amended) A The chip arrangement as set forth in claim ~~34~~ 1, wherein ~~in which~~ the first coupling elements, alternatively the second coupling elements, alternatively the first and second coupling elements, are covered by an insulating layer.

36. (currently amended) A The chip arrangement as set forth in claim ~~34~~ 1, having a reference edge for positioning in manufacturing of the ~~a~~ chip arrangement.

37. (cancelled).

38. (withdrawn) A chip as set forth in claim 31 in which a respective metal element which is connected to ground is provided between the first coupling elements.

39. (withdrawn) A chip as set forth in claim 38 in which the metal element surrounds the coupling element laterally and at the substrate side, in particular in a U-shape.

40. (withdrawn) A chip as set forth in claim 31 comprising a transmitter control which is adapted to output signals on adjacent first or second coupling elements with a predetermined phase shift relative to each other.

41. (withdrawn) A wafer for the production of a chip as set forth in claim 31 comprising a plurality of chip portions, wherein at least one chip portion has the features of a chip as set forth in claim 31.

42. (withdrawn) A process for the production of a chip arrangement as set forth in claim 2 comprising the steps:

- a) positioning the first chip on a carrier,
- b) positioning the second chip relative to the first chip on the carrier,
- c) positioning a coupling component to produce a contactless coupling for signal transmission between the first and second chips.

43. (withdrawn) A process as set forth in claim 42 comprising an additional step of ascertaining active coupling elements.

44. (withdrawn) A chip arrangement as set forth in claim 2 in which the first, second and optionally third and fourth coupling elements are adapted to permit contactless signal transmission by means of electromagnetic, alternatively capacitive, alternatively inductive, alternatively inductive and capacitive coupling between a first and one or more second coupling elements respectively.